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ABSTRACT

No amount of reflection, observation of students, general information, and personal experience can make up for a teacher's lack of knowledge in subject areas. It is pointless for teachers to acquire delivery skills unless they have something to deliver. Several educators have become concerned about what is called "the flight to the sidelines", a trend by educators not to recognize that subject area expertise is implicit in effective teaching, but rather to emphasize the teaching methods without content knowledge. Although teachers now perform many nonteaching roles in school, they must still be able to exercise both social and epistemic control, and they must be good instructors and classroom managers. Subject area expertise provides a basis for all other teaching and classroom management skills. (FG)

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The Flight Away From Content in Teacher Education and Teaching

Margret Buchmann[1]

Who Cares for Content?

Let me introduce this paper by telling a story. At the beginning of a course, I often discuss with my students, future teachers, Schwab's (1973) commonplaces of education. After arguing for the coordination of teacher, learner, content, and milieu in educational theory, practice, and policy, I give them the task of rank-ordering the commonplaces of education. Which one, if rank-ordering were sensible at all, would you put first? For what reasons? Based on which assumptions? This individual exercise leads to group work in which thoughts, arguments, and evidence about the importance of the four commonplaces are discussed and brought together.

When I first ventured into teacher education, I assumed that four groups would sort themselves out by student loyalty to each of the commonplaces of education, and that each commonplace would get a fair share of the votes. Now I know better. In a class of about 30 students, content sometimes musters no partisan at all, environment two, the teacher three to six. The other votes go to the fourth commonplace of education, the student. Groups of about equal size have then to be formed by persuasion and coercion.

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After the group presentations, the class takes a second poll. There is always some shifting of votes away from student to teacher and milieu, but very few or no votes fall, again, to content. Who cares for content? This is a disturbing question.

Why Should We Care?

All professionals use knowledge. In teaching, knowledge enters into professional work in a more unique fashion: knowledge is what teaching is about. For teachers to act in a way that does justice to this intrinsic connection, they need to have content knowledge. To acquire, for example, delivery skills is pointless unless teachers know something they can deliver. Thus, what L. Shulman maintains with regard to cognitive skills and strategies in medical education is even more compelling for teacher education.

> While the knowledge alone may not be sufficient in the absence of appropriate information-processing skills and a proper set of problem formulations, it is abundantly clear that no amount of general intellectual skill or mastery over cognitive strategies will overcome lacks in content knowledge. (1974, p. 325)

Curricular practices and developments in colleges of education and schools can be interpreted as a flight away from content. Curricula include life skills such as interpersonal communication. Preservice work for teachers emphasizes teaching strategies and skills. These skills may be useful, but they do not add to the content knowledge that is required for teaching and curriculum development. Schwab's (1973) discussion of signs of crisis in the field of curriculum provide a starting point for my analysis of the movement to the periphery in education.

Translocation of the Field

There is no lack of evidence for what Schwab sees as the first and most important sign of crisis, the translocation of the field and its problems to men and women other than those who are practitioners within the field. In education, problem definitions and solutions are offered by psychologists, sociologists, philosophers, anthropologists, lawyers, politicians, and the public.

There are some indications that the field is relocating itself. Researchers are beginning to work more with practitioners in education. Some methods of inquiry tend to create a more equal relationship between teachers and researchers. Of course, this movement will not sustain itself and be beneficial if there is no corresponding movement on the part of teachers and teacher educators. As Lortie (1975) argues, "preparing critical, intellectually curious teachers is part of the process of producing practitioners who will be capable of contributing knowledge to the field." (p. 242) Teachers may, however, not be prepared for or inclined to engage in the professional discipline on which the generation of practice-derived knowledge depends. Feiman (1979) describes this special functioning as, "a reflective or inquiring stance; the capacity for informed and independent judgment; the commitment to study and learn from one's own practice." (p. 77) Learning from experience is not automatic; not everyone is capable of it. Practice in itself does not make perfect teachers, it just makes older teachers.[2]

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[2]This point deserves closer analysis in education where the value of (personal) experience goes largely unexamined. See, e.g., Clifford (1975); for a philosophical analysis of what predisposes individuals toward learning from experience, see Scheffler (1977).

The Flight Upward

Schwab looks at "the flight upward", away from the actual problems of the field and toward models and metatheories as another sign of crisis. Models to which the study and practice of teaching and the education of teachers have been assimilated include the actor, the engineer, and the technician.

Though performance does count in the classroom, teaching is not like acting; what the student audience will come to know and do is at the heart of the matter. Teaching is also unlike engineering, where ends, means, and materials are typically known and stable, and ends have physical embodiments. Critics of these models of teaching such as Hawkins (1974), Smith (1979), and Fenstermacher (1978) have raised two groups of objections. First, the activities of teaching are intentional acts in social contexts where knowledge and reflection, insight and conviction support the teacher in the responsible exercise of judgment. Second, teaching aims at worthwhile learning, at the creation of understandings and dispositions held to be desirable.

The "flight upward" connects with the translocation of the field. For, where problematic models become influential, constituencies outside of a field will eventually restore attention to its central purposes. The "back to basics" movement, demands for the testing of teachers as well as high school graduates, and the growing interest of educational researchers in what is taught signal a concern for the content knowledge of teachers and students.

The Flight Away From Content

Schwab mentions the "flight to the sidelines" as another sign of crisis in a field. At the sidelines there are observers, critics and historians. There is, however, another flight to the sidelines, away from what is essential to a field to what is of lesser importance and of marginal relevance to it. The flight to the periphery, away from content, is a distinctive sign of crisis in education. This flight is evidenced and encouraged by skill and performance orientations implicit in models of teaching.

Green (1971) analyzes the activities of teaching in a way that allows one to detect and describe the flight to the periphery in education. Under the first category of activities of teaching, logical acts, Green subsumes activities such as explaining, concluding, demonstrating, and giving reasons. These logical acts relate to the element of reasoning in the practice of teaching. The second category, strategic acts, includes disciplining, evaluating, motivating, and planning. These activities have to do with the direction of students and the organization of material. Teachers also collect milk money, patrol halls, keep records and consult with parents and specialists; they engage in "institutional acts."

Green admits that the categories of logical, strategic, and institutional acts are imprecise. One can easily come up with additions to his lists of teacher activities, while it may be difficult to place them under these three headings. What is important and helpful about Green's categories is that they roughly describe what teachers do, while marking out clearly the activities without which teaching can still occur. The institutional activities of teachers "are in no way required by the

nature of teaching itself. There is no inconsistency in the claim that teaching may go on even when the institutional acts of teaching are not going on." (Green, p. 5, author's emphasis) Socrates did not collect milk money. That, however, did not make him less of a teacher.

The strategic and logical acts, on the other hand, are required by the nature of teaching. That is to say, teachers who never explain or demonstrate anything, who neither answer questions nor question answers may be engaged in some useful activity, but they do not teach. Then again, classroom life that shows no evidence of teacher planning in instruction, where no rules of behavior create some order, and where teacher interest in pupil learning is not discernible would leave one puzzled. Where neither the logical nor the strategic acts of teaching occur, it is unlikely that teaching is going on.

I interpret Green's categories as going from the central to the peripheral; institutional acts being farthest off center. To revert to what is closer to the center means to focus on the logical and strategic activities of teaching. These activities, however, presuppose a content on which they can be exercised. But for content to be present in instruction, a teacher must have subject matter knowledge.

Content Knowledge as Precondition

There is nothing astonishing about the assertion that the presence of content in instruction and the content knowledge of teachers are presupposed by the concept of teaching. These preconditions are a tacit assumption of Green's analysis. But teacher education and teaching gravitate toward the strategic acts of teaching, toward disciplining motivating, and evaluating students. Precision and certainty in these areas--even if supplemented by aptitude and facility in the logical acts

of teaching--do, however, not suffice for the work of teachers.

All the activities of teaching point beyond themselves to some content to be taught. What is actually taught by a teacher is drawn, ideally, from a larger universe of what could and should be taught. Knowledge of potential curricular content, choice of appropriate content for a class or a student, and a grasp of subject matter that is thorough as well as imaginative cannot be accounted for by the logical and strategic activities of teaching. These "teacher competencies" are yielded by content knowledge.

Dewey (1977/1902) had an inspiring vision of the knowledge required for teaching.

> The whole world of visual nature is all too small an answer to the problem of the meaning of the child's instinct for light and form. The entire science of physics is none too much to interpret adequately to us what is involved in some simple demand of the child for explanation of some casual change that has attracted his attention. The art of Rafael or of Corot is none too much to enable us to value the impulses stirring in the child when he draws and daubs. (p. 181)

Content knowledge contributes to a teacher's capacity to honor the learner's quest for understanding. It furthers the development of answers which the teacher himself or herself finds genuinely compelling (Scheffler, 1968). Why does thunder follow lightning? Why does Johnny always hit Mary? Teachers who try to answer such questions in ways which are satisfactory to themselves while being clear and understandable to students benefit greatly from scholarship. This is the case not only because scholarship lends depth and clarity to their answers, but because scholarship brings awareness of the fact that groups of phenomena can be understood and, indeed, perceived in different ways.

In its depth, content knowledge encompasses the structure of the disciplines. Structural features, for example in physics, have educational

aspects (Karplus, Note 1). That is to say, the disciplines can help the teacher develop a pedagogical inventory of alternative, subject-matter specific ways of making knowledge accessible. Simplification in teaching is often given "the sense of 'pruning' or 'stepping down to a lower level'" (Kirsch, 1976, p. 98). Teaching that does not dilute or distort knowledge from the disciplines while reaching a variety of students requires a deep and differentiated understanding of subject matter. As Vollrath (1976) demonstrates for the case of geometry, such an understanding can provide multiple entry points for students who differ in outlook and capacities.

Immanuel Kant argues in the Critique of Pure Reason that it is already a sign of wisdom to avoid unreasonable questions and find the ones that are reasonable to ask. To this purpose, it is sometimes necessary to start with a statement of the obvious, namely that teaching and curricular development presuppose content knowledge. Take, for example,"the ludicrous spectacle of one man milking a he-goat and the other holding a sieve underneath." How can the baffling absence of milk in the sieve be explained? Of course, there are the sex of the animal and the holes in the container.[3] But maybe what needs looking into are the relationship between goat and milker and the animal's life experiences before the event, possibly when in the womb.

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[3]In education, the obvious tends to be stated in less than homely ways. Consider, for example, the "curriculum deficiency hypothesis" (Inkeles, 1977): "Indeed, one of the more clearcut results of the IEA studies in that the presence or absence of a topic in the curriculum is generally a crucial factor in determining whether students will 'know' it on a test." (p. 163)

Remote hypotheses are interesting to investigate and difficult to disconfirm. They also often are mistaken, misleading, and unnecessary. A problem with overlooking the obvious is that in the attempt to understand and remedy a puzzling or unsatisfactory state of affairs, for instance, lack of student learning, centrifugal tendencies are liable to strengthen their ascendance, thus creating more puzzlement and dissatisfaction.

When student achievement is disappointing, it is useful to recall that teaching is conditional upon the presence of educational content in teacher activities, and that the activities of teaching are conditional upon the content knowledge of teachers. In this sense, content has priority in teacher education, teaching and curriculum development.

> If anything is to be regarded as a specific preparation for teaching, priority must be given to a thorough grounding in something to teach. There are other things which a teacher must know well--about children, for instance, and the social conditions which shape their lives. But social workers, therapists, and juvenile employment officers must also know about these things. A teacher, in so far as he is concerned with teaching and not just with therapy, 'socialization', or advice about careers, must have mastered something which he can impart to others. Without this he would be like an actor who was exquisitely sensitive to the reactions of an audience, a master of gesture and of subtle inflexions of voice, but who omitted to do one thing--to learn his words. (Peters, 1977, p. 151)

Though content and content knowledge are presupposed by the concept of teaching, the content knowledge of teachers cannot be assumed. The requirements for breadth and depth of content knowledge should be taken as regulative principles, as standards of excellence for the profession.

In what follows, I will elaborate on the relationship of the content knowledge of teachers to the logical and strategic acts of teaching.

Content Knowledge and the Logical Acts of Teaching

The logical acts of teaching--explaining, concluding, informing, giving reasons, amassing evidence, demonstrating, defining, comparing--require content knowledge on the part of the teacher and some content to be exercised on. In the case of informing, at least some breadth of knowledge is required. For comparing or giving reasons, breadth as well as depth are needed. For concluding and demonstrating, systematic knowledge and awareness of significant details are necessary, and so on. Teachers are unlikely "to assess evidence . . ., reflect on principles, and deliberate belief and knowledge claims" (Fenstermacher, 1980, p. 36), if their content knowledge does not support and provide substance for these and other logical acts of teaching.

In the classroom, teachers have not only social control, but epistemic control as well.[4] If the teacher's authority is not anchored in content knowledge, it can frustrate the independent thinking of students. A mathematical algorithm invented by a student, for example, must not be diagnosed as a mistake cimply because it deviates from the teacher's way of arriving at a solution. On the other hand, content knowledge helps the teacher to recognize the source of mistakes that learners make and to unravel patterns of misunderstanding. Confusion is not done away with by pointing out what the right answer to a question is. To further student learning, misunderstandings have to be traced, fathomed, and responded to by the teacher in a pedagogical fashion.

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[4]For a philosophical analysis of this point, see Freeman (Note 2).

In a classic essay, "The relationship of theory to practice in education," (Dewey (1965/1904) cast teachers in the role of observers and directors of mind activity. The detachment that is associated with this role implies a shift of focus from the teacher's own performance to that of the learner. Such detachment can hardly be achieved without the confidence that stems from thorough content knowledge. In this sense, content knowledge not only supports, but makes room for a teacher's attention to the logical activities involved in learning subject matter. But how can one recognize, let alone guide, mental activities involved in learning if neither personal experience of such processes nor an intellectual grasp of what is to be taught prepare one for this task? In observing and guiding mind activity teachers need "a sense of what adequate and genuine mental activity means." (p. 161)

Dewey held that the "delicate and far-reaching matter of intellectual responsibility" (p. 147) is too frequently ignored by the teaching profession. This concern bears restatement. The requirements for depth and breadth in content knowledge need not put the generalists among teachers out of business in all curricular areas. Deficiencies in the fullness and detail of content knowledge can sometimes be overcome by the command and exercise of a reflective and inquiring stance. The teacher's experience, thoughtfully explored, can yield knowledge and insight that help in teaching and curriculum development. However, no amount of reflection, observation of students, general information, and personal experience can overcome lacks of knowledge in areas such as mathematics and chemistry. It is, on the other hand, arguable that content

knowledge can overcome a lack of teaching skills by substituting for them.

Content Knowledge and the Strategic Acts of Teaching

A recent review of research on teacher behavior and its effects by Brophy (1979) lends itself to the interpretation that content knowledge is a specific preparation for teaching and classroom management. With regard to the contributions that management and teaching skills make to student learning, Brophy comments as follows, citing a review conducted by himself and Putnam:

> Both aspects of teaching involve similar elements of preparation and organization skills, and many aspects of classroom management are essentially instructional tasks requiring the teacher primarily to show the students what to do rather than to motivate them to do something they already know. (p. 736)

In other words, there are natural affinities between being a good instructor and a good classroom manager. Moreover, if teaching moves toward new content, teachers are primarily occupied with instruction as the matter at hand. By inference, the question of student motivation is addressed in terms of teacher activities immediately related--rather than exogenous--to content and student learning. Without content knowledge, the teacher's push toward new content is likely to be frustrated and the natural affinity among different kinds of organization skills cannot become operative. This point of view is quite similar to Dewey's. He maintains in the essay quoted above that the mastery of the techniques of classroom management and the mastery of subject matter are, in Dewey's words, "strictly correlative" problems.

To look at the relation of content knowledge to skills in classroom teaching in this fashion is like saying that where there are flint deposits (content knowledge), there are arrowheads (teaching skills). It is indeed

the case that certain natural occurrences--temperature changes, movement of gravel, or the action of the ocean--fracture and chip flint blocks, thus turning something that is simply there into instruments that lend themselves to purposeful usage. Not all arrowheads are produced in this way, and the ones which are fashioned incidentally may be inferior to the ones shaped intentionally. However, given the limited amount of time available for the education of teachers, the suggested relations between content knowledge and teaching skills are worth being pondered and put to use.

Learning as an End

Two different claims were made in this argument. Content knowledge has some pay-offs for the logical and strategic activities of teaching, while the reverse does not hold. Content knowledge is the appropriate focus of education and teacher education. If the first claim is conceded, the route to teaching strategies and management skills through content is reasonable because it is economical. If the second claim is granted, the route through content is desirable because it maintains, maybe restores, the proper relationship between skills and content in teacher education as means toward the end of student learning. M. Oakeshott (1972) lists teaching strategies in mingled profusion to highlight this relationship.

> Thus, teaching is a variegated activity which may include hinting, suggesting, urging, coaxing, encouraging, guiding, pointing out, conversing, instructing, informing, narrating, lecturing, demonstrating, exercising, testing, examining, criticizing, correcting, tutoring, drilling and so on--everything, indeed, which does not belie the engagement to impart an understanding. (p. 25-26, emphasis mine)

Teaching is a human engagement which has to do with the imparting and gaining of knowledge and understanding; curriculum development is an

activity meant to further these goals.

Confusion of ends and means and shifts of concern from substantive to process goals often accompany human engagements. M. Levin (in Lipsky, 1980) asserts that "judges tend to emphasize processing their case loads as an end in itself rather than as a means for achieving other goals." (p. 44) Social workers will define their aims in terms of client-contact hours, and teacher see themselves as custodians or disciplinarians. Goals of learning, justice, and charity are harder to reach than the managerial performances which often usurp their place, but the measure of their difficulty is a measure of their worth.

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